

Raw values

| Name | Number | Length[m] | Radius[mm] | Bpt [T] |
|------|--------|-----------|------------|---------|
| QH1 | 18 | 2 | 58 | -0.59 |
| QH2 | 30 | 2 | 75 | 0.73 |
| QH3 | 30 | 2 | 55 | -0.95 |
| QH4 | 30 | 2 | 47 | 0.77 |
| DS2 | 6 | 2 | 53 | 0.94 |
| FS3 | 6 | 2 | 67 | -0.83 |
| FS2 | 6 | 1.81 | 97 | -0.33 |
| DS1 | 6 | 4 | 110 | 0.79 |
| FS1 | 6 | 2.06 | 90 | -0.79 |

$$R_{x,y} = b_{beat} * n_{\sigma} * \sqrt{\beta_{x,y} \epsilon_{x,y}} + |\eta_{x,y}| \frac{1}{2} \left(\frac{\delta p}{p_0} \right)_{full} + 4\text{mm (pipe)} + 2\text{mm} \sqrt{\beta_{x,y} / \beta_{x,y max}}$$

$$B_{pt_{max}} = (B\rho) \cdot R_{\max(x,y)} \cdot k$$

b_beat = 1.1

n_sigma = 4

Make families

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|------|--------|-----------|------------|---------|
| QH1 | 18 | 2 | 67 | -0.68 |
| QH2 | 30 | 2 | 75 | 0.73 |
| QH3 | 30 | 2 | 55 | -0.97 |
| QH4 | 30 | 2 | 55 | 0.90 |
| DS2 | 6 | 2 | 55 | 0.97 |
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| DS2 | 6 | 2 | 52 | 0.92 |
| FS3 | 6 | 2 | 66 | -0.70 |
| FS2 | 6 | 1.81 | 99 | -1.04 |
| DS1 | 6 | 4 | 124 | 1.22 |
| FS1 | 6 | 2.06 | 99 | -1.13 |

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| QH4 | 30 | 2 | 41 | 1.02 |
| DS2 | 6 | 2 | 47 | 1.24 |
| FS3 | 6 | 2 | 59 | -1.09 |
| FS2 | 6 | 1.81 | 75 | -0.38 |
| DS1 | 6 | 4 | 84 | 0.91 |
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| QH4 | 30 | 2 | 48 | 1.19 |
| DS2 | 6 | 2 | 48 | 1.26 |
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